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RATE ADAPTATION AND PARAMETER OPTIMIZATION FOR
MULTI-BAND SINGLE CARRIER TRANSMISSION

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ABSTRACT OF THE DISCLOSURE

10 A method for enhancing the bit rate and/or margin at which
quadrature amplitude modulation (QAM) communication is performed
over multiple bands of a communication link includes the steps
of varying a spectral allocation and constellation size with
which communication is performed, so as to define a combination
of spectral allocation and constellation size at which the bit
rate and/or margin are enhanced. The rate adaptation method
identifies the spectral allocation and constellation size to use
15 on each of the multiple bands that results in a total bit rate
greater than or equal to the target bit rate, subject to
specified constraints on SNR margin and/or BER limits. If more
than one parameter set has this property, the rate adaptation
method may for example select the spectral allocation and
20 constellation size combination that maximizes the minimum SNR
margin across the multiple bands.

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